

**WIRELESS ACCESS SYSTEM AND ASSOCIATED METHOD USING
MULTIPLE MODULATION FORMATS IN TDD FRAMES
ACCORDING TO SUBSCRIBER SERVICE TYPE**

ABSTRACT OF THE DISCLOSURE

5 There is disclosed a radio frequency (RF) modem shelf for use
in a fixed wireless access network comprising a plurality of base
stations capable of bidirectional time division duplex (TDD)
communication with wireless access devices disposed at a plurality
10 of subscriber premises. The radio frequency (RF) modem shelf
comprises: 1) a first RF modem capable of communicating with a
plurality of the wireless access devices using TDD frames, each TDD
frame having an uplink for receiving data and a downlink for
transmitting data; and 2) a modulation controller associated with
the RF modem shelf capable of determining an optimum modulation
15 configuration for each of the plurality of wireless access devices
communicating with the first RF modem, wherein the modulation
controller causes the first RF modem to transmit first downlink
data to a first wireless access device in a first data block having
a first optimum modulation configuration and to transmit second
20 downlink data to the first wireless access device in a second data
block having a different second optimum modulation configuration.